Docket No.: 03-4027
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Michael A. Dean

Confirmation No.: 5673

Application No.: 10/803,551

Art Unit: 2168

Filed: March 18, 2004

Examiner: OMOSEWO, OLUBUSOLA

For: METHODS AND APPARATUS FOR FOCUSING SEARCH RESULTS ON THE SEMANTIC WEB

APPEAL BRIEF

MS APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This Appeal Brief is filed pursuant to 37 C.F.R. § 41.37 in furtherance of the Notice of Appeal filed in the above-identified application on July 17, 2007, and appeals the final decision of the primary Examiner in the final Office Action dated April 20, 2007 ("Final Office Action"). This application was filed March 18, 2004.

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I. REAL PARTY IN INTEREST

The real parties in interest are Verizon Corporate Services Group Inc., Assignee, a corporation organized and existing under the laws of the state of New York, and having a place of business at One Verizon Way, Basking Ridge, NJ 07920, and BBN Technologies Corp., Assignee, a corporation organized and existing under the laws of the state of Delaware, and having a place of business at 10 Moulton Street, Cambridge, Massachusetts 02138.

II. RELATED APPEALS AND INTERFERENCES

Applicants (hereinafter "Appellants") are not aware of any related appeals or interferences that would affect the Board's decision on the current appeal.

III. STATUS OF CLAIMS

Claims 1-15 are pending, and are subject of this Appeal. All pending claims stand rejected under 35 U.S.C. 102(b) as allegedly anticipated by U.S Patent No. 6,038,560 to Wical ("Wical"). Each of claims 1-15 is reproduced in an Appendix to this Appeal Brief.

IV. STATUS OF AMENDMENTS

Appellants did not make, and the Examiner did not enter, any amendments into the record of this application following in the Final Office Action.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The presently claimed invention includes various methods, systems, and computer programs. The following is a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, as required by 37 C.F.R. § 41.37(c)(1)(v). Further, pursuant to 37 C.F.R. § 41.37(c)(1)(v), every means plus function and step plus function as permitted by 35 U.S.C. 112, sixth paragraph, is identified and the structure, material, or acts described in the specification as corresponding to each claimed function is set forth with reference to the specification by page and line number, and to the drawing, if any, by reference characters. However, it is to be understood that portions of the specification not cited herein may further explain and clarify the recited means. In general, the following explanation is not intended to be used to construe the claims, which are believed to speak for themselves, nor do Appellants intend the following explanation to modify or add any claim elements, or to constitute a disclaimer of any equivalents to which the claims would otherwise be entitled, nor is any discussion of certain preferred embodiments herein intended to disclaim other possible embodiments. References herein to the Specification are intended to be exemplary and not limiting.

Citations below refer to the Appellants' Specification by page and line number, and to their drawings by reference characters, as required by 37 C.F.R. § 41.37(c)(1)(v).

A. Claim 1

Claim 1 recites a method of obtaining search results (Figs. 2A-2E, Page 11, lines 12-13). The method includes the step of parsing statements from at least one Semantic Web structured resource to identify component words. For example, as illustrated in Appellants' Figs. 1 and 3, the system 100 includes parser 106, which can tokenize the literal values obtained from gathered Semantic Web resources 102 (Fig. 3, step 310; Page 7, lines 18-19; Page 11, lines 20-21).

The method of claim 1 further includes constructing an index from said component words, said index relating said component words to said statements. For example, as illustrated in Appellants' Figures 1 and 3, the system 100 includes a processor 106a capable

of constructing or modifying an index stored in database 108 based on the statement obtained by agents 122. (Fig. 3, step 312; Page 11, line 22 - Page 12, line 2).

The method of claim 1 further includes comparing component words to a search term to identify matching words and identifying related ones of said statements for said matching words based on said index. For example, as illustrated in Appellants' Figures 1 and 3, the system 100 includes a word search servlet 120 and search engine 112 for comparing the search term with the database index and identifying statements in which the search term occurs (Fig. 3, step 318; Page 8, lines 4-6; Page 12, lines 5-7).

The method of claim 1 further includes obtaining predicates, instances, types of said instances, and literal values of said related ones of said statements. For example, as illustrated in Appellants' Figures 1 and 3, after the system 100 identifies the statement in which the search term occurs it determines the predicates, instances, and types for the identified statements (Fig. 3, step 320 and 328; Page 12, line 7 and lines 9-11), and

The method of claim 1 further includes summarizing said predicates, instances, types, and literal values for presentation to a user as said search results. For example, as illustrated in Appellants' Figures 1 and 3, the user 110 can specify whether the results are presented as graphical representations or textual representations (Fig. 3, steps 330-334; Page 12, lines 10-12).

B. Claim 2

Claim 2 depends on claim 1, and discloses that summarizing comprises: arranging said predicates, instances, types, and literal values into one or more graphical representations; and grouping said graphical representations according to at least one of said types and said literal values. For example, as illustrated in Appellants' Figure 3, the predicates, instances and types for the identified statements can be determined and the results can be presented to the user 110 (Fig. 3, step 328; Page 12, lines 9-10). Furthermore, the user 110 can specify whether the results can be presented as summaries or as graphical representations (Fig. 3, steps 330-334; Page 12, lines 10-12).

C. Claim 3

Claim 3 depends on claim 1 and further comprises the steps of identifying Semantic Web structured resources to obtain identified Semantic Web structured resources, gathering statements from said identified Semantic Web structured resources to obtain gathered statements and presenting said gathered statements for parsing of said gathered statements. For example, as illustrated in Appellants' Figures 1 and 3, agents 122 can include instructions for identifying Semantic websites or resources 102 and gathering statements from the resources for use in later searches. The agents 122 can also present the statements to the parsers 106 (Fig. 3, steps 304-308; Page 11, lines 15-20).

The method of claim 3 further includes, wherein constructing an index comprises updating said index based on the parsing of said gathered statements. For example, as illustrated in Appellants' Figure 3, method 300 can construct and/or modify the index of the database based on statements obtained by agents 122 (Fig. 3, step 312; Page 11, line 22 - Page 12, line 2).

The method of claim 3 further includes, wherein said identifying, gathering and presenting are iteratively performed. For example, as illustrated in Appellants' Figure 3, method 300 includes a loop for the gathering step, the identifying step, and representations step, thereby iterating through steps 302-308 (Fig. 3, step 314; Page 12, lines 2-5).

D. Claim 4

Claim 4 depends on claim 3, and discloses that summarizing comprises: arranging said predicates, instances, types, and literal values into one or more graphical representations; and grouping said graphical representations according to at least one of said types and said literal values. For example, as illustrated in Appellants' Figure 3, the predicates, instances and types for the identified statements can be determined and the results can be presented to the user 110 (Fig. 3, step 328; Page 12, lines 9-10). Furthermore, the user 110 can specify whether the results can be presented as summaries, or as graphical representations (Fig. 3, steps 330-334; Page 12, lines 10-12).

E. Claim 5

Claim 5 recites a computer-readable medium containing instructions for controlling a processor to construct a database performing the steps of visiting sites on a network to identify Semantic Web structured resources and gathering statements from said Semantic Web structured resources. For example, as illustrated in Appellants' Figures 1 and 3, agents 122 can include programs, acting on behalf of the user, for visiting semantic websites or resources 102, gathering statements from the resources for use in later searches, and presenting the statements to the parsers 106 (Fig. 3, steps 302-308; Page 11, lines 15-21).

Claim 5 further includes parsing of said statements to identify component words. For example, as illustrated in Appellants' Figures 1 and 3, the system 100 includes parser 106, which may tokenize the literal values obtained from gathered Semantic Web resources 102 (Fig. 3, step 310; Page 7, lines 18-19; Page 11, lines 20-21).

Claim 5 further includes constructing an index from said component words, said index relating said component words to said statements and storing said index as said database on said computer-readable medium. For example, as illustrated in Appellants' Figures 1 and 3, the system 100 includes a processor 106a capable of constructing or modifying an index stored in database 108 based on the statements obtained by agents 122. (Fig. 3, step 312; Page 11, line 22 - Page 12, line 2).

Claim 5 further includes updating said database by iteratively performing said visiting, said gathering, said parsing, said constructing, and said storing. For example, as illustrated in Appellants' figures 3, method 300 can construct and/or modify the index of the database based on statements obtained by agents 122 (Fig. 3, step 312; Page 11, line 22 - Page 12, line 2). Furthermore, method 300 includes a loop for the gathering step, the identifying step, and representations step, thereby iterating through steps 302-308 (Fig. 3, step 314; Page 12, lines 2-5).

F. Claim 6

Claim 6 depends on claim 5, and further comprises obtaining predicates, instances, types of said instances, and literal values of said statements related to search terms of said query by said index; and summarizing said predicates, instances, types, and literal values for

presentation to a user as said search results. For example, as illustrated in Appellants' Figures 1 and 3, after the system 100 identifies the statement in which the search term occurs it determines the predicates, instances, and types for the identified statements (Fig. 3, step 320 and 328; Page 12, line 7 and lines 9-11). Furthermore, as illustrated in Appellants' Figures 1 and 3, the user 110 can specify whether the results are presented as graphical representations or textual representations (Fig. 3, steps 330-334; Page 12, lines 10-12).

G. Claim 7

Claim 7 depends on claim 6, and discloses that summarizing comprises: arranging said predicates, instances, types, and literal values into one or more graphical representations; and grouping said graphical representations according to at least one of said types and said literal values. For example, as illustrated in Appellants' Figure 3, the predicates, instances and types for the identified statements can be determined and the results can be presented to the user 110 (Fig. 3, step 328; Page 12, lines 9-10). Furthermore, the user 110 can specify whether the results can be presented as summaries, or as graphical representations (Fig. 3, steps 330-334; Page 12, lines 10-12).

H. Claim 8

Claim 8 recites a system for obtaining search results for a query prepared by a user including at least one parser receiving statements from Semantic Web structured resources and identifying component words of said statements. For example, as illustrated in Appellants' Figures 1 and 3, the system 100 includes parser 106, which can tokenize the literal values obtained from gathered Semantic Web resources 102 (Fig. 3, step 310; Page 7, lines 18-19; Page 11, lines 20-21).

Claim 8 further includes a processor for constructing an index relating said component words to said statements and a database for storing said index. For example, as illustrated in Appellants' Figures 1 and 3, the system 100 includes a processor 106a capable of constructing or modifying an index stored in database 108 based on the statement obtained by agents 122. (Fig. 3, step 312; Page 11, line 22 - Page 12, line 2).

Claim 8 further includes a search engine for matching search terms of said query to said component words to obtain matched words, said search engine identifying said statements related to said matched words and a servlet for obtaining predicates, instances, types of said instances, and literal values of said statements related to said matched words. For example, as illustrated in Appellants' Figures 1 and 3, the system 100 includes a word search servlet 120 and search engine 112 for comparing the search term with the database index and identifying statements in which the search term occurs (Fig. 3, step 318; Page 8, lines 4-6; Page 12, lines 5-7).

Claim 8 further includes an object viewer for summarizing said predicates, instances, types, and literal values for presentation to said user as said search results. For example, as illustrated in Appellants' figures 1, a user 110 can view the results of a given search using a user interface 118, which may include a web browser (Page 8, lines 16-17).

I. Claim 9

Claim 9 depends on claim 8, and further comprises: means for arranging said predicates, instances, types, and literal values into one or more graphical representations; and means for grouping said graphical representation according to at least one of said types and said literal. For example, as illustrated in Appellants' Figure 3, the predicates, instances and types for the identified statements can be determined and the results can be presented to the user 110 (Fig. 3, step 328; Page 12, lines 9-10). Furthermore, the user 110 can specify whether the results can be presented as summaries, or as graphical representations (Fig. 3, steps 330-334; Page 12, lines 10-12).

J. Claim 10

Claim 10 depends on claim 8, and further comprises means for identifying Semantic Web structured resources to obtain identified Semantic Web structured resources; means for gathering statements from said identified Semantic Web structured resources to obtain gathered statements; and means for presenting said gathered statements for parsing of said gathered statements. For example, as illustrated in Appellants' Figures 1 and 3, agents 122 can include instructions for identifying Semantic websites or resources 102 and gathering

statements from the resources for use in later searches. The agents 122 can also present the statements to the parsers 106 (Fig. 3, steps 304-308; Page 11, lines 15-20).

Claim 10 further comprises means for iteratively invoking said means for identifying, said means for gathering and said means for presenting, and wherein said processor comprises means for updating said index based on the parsing of said gathered statements. For example, as illustrated in Appellants' Figure 3, method 300 includes a loop for the gathering step, the identifying step, and representations step, thereby iterating through steps 302-308 (Fig. 3, step 314; Page 12, lines 2-5). Furthermore, as illustrated in Appellants' Fig. 3, method 300 can construct and/or modify the index of the database based on statements obtained by agents 122 (Fig. 3, step 312; Page 11, line 22 - Page 12, line 2).

K. Claim 11

Claim 11 depends on claim 10 and further comprises means for arranging said predicates, instances, types, and literal values into one or more graphical representations; and means for grouping said graphical representations according to at least one of said types and said literal values. For example, as illustrated in Appellants' Figure 3, the predicates, instances and types for the identified statements can be determined and the results can be presented to the user 110 (Fig. 3, step 328; Page 12, lines 9-10). Furthermore, the user 110 can specify whether the results can be presented as summaries, or as graphical representations (Fig. 3, steps 330-334; Page 12, lines 10-12).

L. Claim 12

Claim 12 recites a computer program, disposed on a computer readable medium, for enabling searching of and presentation of search results from Semantic Web structured resources. The computer program parses statements from at least one Semantic Web structured resource to identify component words. For example, as illustrated in Appellants' Figures 1 and 3, the system 100 includes parser 106, which can tokenize the literal values obtained from gathered Semantic Web resources 102 (Fig. 3, step 310; Page 7, lines 18-19; Page 11, lines 20-21).

The computer program of claim 12 further constructs an index from said component words, said index relating said component words to said statements. For example, as illustrated in Appellants' figures 1 and 3, the system 100 includes a processor 106a capable of constructing or modifying an index stored in database 108 based on the statement obtained by agents 122. (Fig. 3, step 312; Page 11, line 22 - Page 12, line 2).

The computer program of claim 12 further compares said component words to a search term to identify matching words and identifies related statements for matching words based on the index. For example, as illustrated in Appellants' Figures 1 and 3, the system 100 includes a word search servlet 120 and search engine 112 for comparing the search term with the database index and identifying statements in which the search term occurs (Fig. 3, step 318; Page 8, lines 4-6; Page 12, lines 5-7).

The computer program of claim 12 further obtains predicates, instances, types of said instances, and literal values of said related ones of said statements. For example, as illustrated in Appellants' Figures 1 and 3, after the system 100 identifies the statement in which the search term occurs it determines the predicates, instances, and types for the identified statements (Fig. 3, step 320 and 328; Page 12, line 7 and lines 9-11).

The computer program of claim 12 further summarizes the predicates, instances, types, and literal values for presentation to a user as said search results. For example, as illustrated in Appellants' Figures 1 and 3, prior to receiving the search results, a user may select whether the results should be summarized as graphical representations or textual representations (Fig. 3, steps 330-334; Page 12, lines 10-12).

M. Claim 13

Claim 13 depends on claim 12, and further comprises instructions for causing a processor to arrange said predicates, instances, types, and literal values into one or more graphical representations; and group said graphical representations according to at least one of said types and said literal values. For example, as illustrated in Appellants' Figure 3, the predicates, instances and types for the identified statements can be determined and the results can be presented to the user 110 (Fig. 3, step 328; Page 12, lines 9-10).

Furthermore, the user 110 can specify whether the results can be presented as summaries, or as graphical representations (Fig. 3, steps 330-334; Page 12, lines 10-12).

N. Claim 14

Claim 14 depends on claim 12, and further comprises instructions to identify Semantic Web structured resources to obtain identified Semantic Web structured resources; gather statements from said identified Semantic Web structured resources to obtain gathered statements; and present said gathered statements for parsing of said gathered statements. For example, as illustrated in Appellants' Figures 1 and 3, agents 122 can include instructions for identifying Semantic websites or resources 102 and gathering statements from the resources for use in later searches. The agents 122 can also present the statements to the parsers 106 (Fig. 3, steps 304-308; Page 11, lines 15-20).

Claim 14 further comprises instructions to construct an index comprise instructions for causing a processor to update said index based on the parsing of said gathered statements; and to identify, gather and present comprise instructions for causing a processor to iteratively identify, gather and present. For example, as illustrated in Appellants' Figure 3, method 300 includes a loop for the gathering step, the identifying step, and representations step, thereby iterating through steps 302-308 (Fig. 3, step 314; Page 12, lines 2-5). Furthermore, as illustrated in Appellants' Fig. 3, method 300 can construct and/or modify the index of the database based on statements obtained by agents 122 (Fig. 3, step 312; Page 11, line 22 - Page 12, line 2).

O. Claim 15

Claim 15 depends on claim 14 and further comprises instructions to arrange said predicates, instances, types, and literal values into one or more graphical representations; and group said graphical representations according to at least one of said types and said literal values. For example, as illustrated in Appellants' Figure 3, the predicates, instances and types for the identified statements can be determined and the results can be presented to the user 110 (Fig. 3, step 328; Page 12, lines 9-10). Furthermore, the user 110 can

specify whether the results can be presented as summaries, or as graphical representations (Fig. 3, steps 330-334; Page 12, lines 10-12).

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

1. Whether claims 1-15 are anticipated by U.S Patent No. 6,038,560 to Wical("Wical").

VII. ARGUMENT

All pending claims stand rejected under 35 U.S.C. § 102(b) as allegedly anticipated by by Wical. Wical does not teach or suggest each and every element of Appellants' claims. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). *See also* M.P.E.P. § 2131. Therefore, for at least the reasons set forth herein, the present rejection of all pending claims must be reversed.

In contrast to Wical, the presently claimed invention recites Semantic Web resources. In contrast to unstructured resources, information on a Semantic Web resource is maintained in a structure for interpretation by computers. The Resource Description Framework (RDF), a framework for describing internet resources, such as Web sites and their content, sets forth structural requirements for Semantic Web resources. With respect to search and data aggregation, Semantic web resources provide an alternative to simply collecting and indexing entire unstructured resources by providing the content in a structure that separates the portions of the resource in isolated statements, which can be individually processed. Prior to the presently claimed invention, search engines did not take advantage of the rich contextual information provided by RDF statements of Semantic Web sites. Specification, ¶¶ 3-6.

For example, Wical discloses a knowledge base search and retrieval system.[1] The knowledge base contains a content processing system 110 that analyzes thematic, contextual, and stylistic aspects of documents 130 and generates a document theme vector 160 for each document.[2] The documents may include articles, books, periodicals, etc.[3] Each document theme vector 160 is a collection of themes relating to a single document 130.[4] Individual themes are classified into a hierarchical structure.[5] Documents 130 are classified into one or more themes.[6] When a user performs a query, the content processing system 110 identifies which themes relate to the search terms, and returns a list identifying the documents 130

[1] Wical, Abstract; Column 5, lines 42-56.
[2] Wical, Column 5, lines 42-56.
[3] Wical, Column 5, lines 40-41.
[4] Wical, Column 5, lines 42-56.
[5] Wical, Figure 8A-8C.

related to the theme of the search, categorized into themes.[7] Thus, as discussed further below, Wical does not use the Semantic Web, and does not read on Appellants' claims for using the Semantic Web.

A. Independent claims 1, 5, 8, and 12 (Ground of Rejection No. 1)

1. "Semantic Web structured resources"

Independent claims 1, 5, 8, and 12 all recite one or more "Semantic Web structured resources." Wical, in contrast, contains no teaching or suggestion that his documents must be "structured resources," much less "Semantic Web structured resource[s]." In fact, Wical teaches against "structured resources" as recited in Appellants' claims.

Wical discloses "a content processing system [that] processes a plurality of documents to identify themes for a document, and classifies the documents, including themes identified for the documents, and categories of [a] knowledge base."[8] While Wical processes documents, such as articles, books, periodicals, etc., Wical does not teach or suggest processing "Semantic Web Structured resources."[9] Wical's shortcoming is made evident at least by the facts that (a) Wical fails to process the documents as separate statements, and (b) Wical creates a theme vector for each document as a whole, and not to each separate statement.

Further, if Wical processed Semantic Web Structured resources, or included "statements from at least one Semantic Web structured resource," then Wical would not need to analyze "the semantic, contextual, and stylistic aspects" of documents. In particular, the structure of Semantic Web resources serves to identify the portions of the document providing descriptions of the included content, thereby making grammatical and semantic analysis unnecessary. Conversely, Wical's analysis of "the semantic, contextual, and stylistic aspects" of documents would have suggested to one of ordinary skill in the art that Semantic Web structured resources were unnecessary. Wical thus teaches away from Appellants' claims.

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[6] Wical, Column 5, lines 42-56.
[7] Wical, Figures 10A-12.
[8] Wical, Column 2, lines 63-67.

The documents processed by Wical are clearly not processed as "structured resources" at all because Wical processes a document irrespective of the document's structure, or lack of structure. In fact, a portion of Wical cited by the Examiner explains that Wical's "documents may be articles, books, periodicals etc."[10] This list of potential documents establishes that Wical does not perform any processing of structured documents to extract theme information. Instead, Wical teaches accepting data from various documents, and extracting theme information, regardless of the documents' structure. Again, one of ordinary skill would have understood from Wical that "structured resources" as recited in Appellants' claims were unnecessary.

Accordingly, the rejections of claims 1, 5, 8, and 12 should be reversed at least for the foregoing independent reasons. Further, the rejections of all pending dependent claims should be reversed at least by reason of their dependence from one of the foregoing independent claims.

2. "component words"

Independent claim 1 recites "parsing statements from at least one Semantic Web structured resource to identify component words." Independent claim 5 recites "gathering statements from said Semantic Web structured resources; parsing of said statements to identify component words." Independent claim 8 recites "at least one parser receiving statements from Semantic Web structured resources and identifying component words of said statements." Independent claim 12 recites "instructions for causing a processor to: parse statements from at least one Semantic Web structured resource to identify component words." Wical does not include any teaching or suggestion of "component words," much less of parsing statements to identify component words.

In each of the independent claims set forth above, "component words" are identified in "statements" parsed from "structured resources," i.e., a *single* structured resource may contain *multiple* statements, and a *single* statement may contain *multiple* component words. That is, the claims recite a *first* one-to-many relationship between a structured resource and its

[9] Wical, Column 5, lines 40-41.
[10] See Final Office Action, page 6; see also Advisory Action dated July 3, 2007.

associated statements, and a *second* one-to-many relationship between a single statement and its associated component words.

Wical, in contrast, discloses creating a single theme vector for each document, the theme vector storing thematic, contextual, and stylistic aspects of the document.[11] Wical discloses that each document may be classified at most into one or more themes that are indicated in the theme vector. Wical does not in any way teach or suggest that single themes can be further broken down into "component words" or any analogous elements. Thus, Wical teaches at most a one-to-one relationship between theme vectors and documents, and in no way teaches or suggests a one-to-many relationship. Further, at most, Wical discloses a one-to-many relationship between a single document and one or more themes. At a minimum, therefore, Wical wholly fails to disclose a second one-to-many relationship as recited in Appellants' independent claims.

To further explain the differences between Appellants' independent claims and Wical, consider the Examiner's assertion that "Wical teaches a content processing system, which analyzes documents to provide thematic profiles and classification of the document," and that Wical further teaches "[a] theme parser and grammatical parser."[12] Also, consider the Examiner's assertion that "Wical's teachings includes the inference processing 145 which parses the document with a restaurant review column and adds the theme/term restaurant to the document theme vector 160."[13]

While Wical may disclose that documents are parsed to extract themes, Wical does not teach or suggest "parsing statements from at least one Semantic Web structured resource to identify component words." As explained above, parsing a document for the purpose of extracting a theme is clearly distinguishable from "parsing statements from at least one Semantic Web structured resource to identify component words," because the parsing performed in Wical does not include: first, parsing statements from documents, and thereafter identifying component words within the statements. Instead, Wical only discloses parsing documents to extract themes in a single step. That is, Wical is simply missing any teaching or suggestion of parsing statements extracted from documents to identify component words –

[11] Wical, column 5, lines 41-58.
[12] Final Office Action, page 6.

Wical teaches at most identifying statements but not any parsing of the statements to identify component words.

The rejections of claims 1, 5, 8, and 12 should be reversed at least for the foregoing independent reasons. Further, the rejections of all pending dependent claims should be reversed at least by reason of their dependence from one of the foregoing independent claims.

3. "index relating component words to statements"

Independent claim 1 recites "constructing an index from said component words, said index relating said component words to said statements." Independent claim 5 recites "constructing an index from said component words, said index relating said component words to said statements." Independent claim 8 recites "a processor for constructing an index relating said component words to said statements." Independent claim 12 recites "construct an index from said component words, said index relating said component words to said statements." Wical does not teach or suggest an index relating component words to statements, thus providing further ground for reversing the Examiner's rejection of Appellants' claims.

On page 7 of the Final Office Action, the Examiner asserted that Wical discloses indexing of component words, citing to Wical at Col. 6, lines 64 – Col. 7, line 2, referring to the creation of the "theme vector", and Col. 29, line 32 - Col. 30, line 30 referring to the indexing processor used to parse documents.

Wical's theme vector does not in any way teach or suggest an index relating component words to statements. Wical discloses, at most, determining which themes are associated with a given document and thereafter collecting all the themes into a collection called a "theme vector."[14] In Wical, each document is associated with a single theme vector. However, Wical's "theme vector" is not an index at all, but simply a collection of themes associated with a given document. For example, Wical's Table 1 illustrates a theme vector as a collection of themes and theme strength values. [15]

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[13] Id., Wical, Column 2, lines 63-67
[14] Wical, Column 5, lines 42-56; Column 6, line 62-Column 7, line 2; Column 7, lines 42-57.
[15] Wical, Column 5, lines 42-56. Column 6, line 62-Column 7, line 2; Column 7, lines 42-57

In sum, the content processing performed by Wical's content indexing processor does not create an index relating component words to statements. Wical discloses parsing documents to differentiate thematic relationships from document contents. Wical does not identify themes or component words with statements from web resources. By contrast, Appellants' claims recite "constructing an index from said component words, said index relating said component words to said statements."

Accordingly, the rejections of claims 1, 5, 8, and 12 should be reversed at least for the foregoing independent reasons. Further, the rejections of all pending dependent claims should be reversed at least by reason of their dependence from one of the foregoing independent claims.

B. Independent Claims 1, 8, and 12 and Dependent Claim 6 (Ground of Rejection No. 1)

1. "obtaining predicates, instances, types of said instances, and literal values"

Independent claim 1 recites "obtaining predicates, instances, types of said instances, and literal values of said related ones of said statements; and summarizing said predicates, instances, types, and literal values for presentation to a user as said search results." Dependent claim 6 recites "obtaining predicates, instances, types of said instances, and literal values of said statements related to search terms of said query by said index." Independent claim 8 recites "a servlet for obtaining predicates, instances, types of said instances, and literal values of said statements related to said matched words." Independent claim 12 recites "obtain predicates, instances, types of said instances, and literal values of said related ones of said statements." Wical fails to teach or suggest obtaining predicates, instances, types of instances, and literal values of related ones in statements, providing further grounds for reversing the rejections of Appellants' claims.

On page 7 of the Final Office Action, the Examiner provided examples of alleged elements comparable to "types" and "predicates" disclosed by Wical. The Examiner asserted that "the search and retrieval system response may include different types of documents such as financial securities (type) which is a stock and which is retrieved based on a the search

word stock (predicate), and animals (type) which is a stock and which is retrieved based on the search word stock (predicate), and race automobiles (type) and which is retrieved based on the search word stock (predicate)..."

These examples fail to read on Appellants' claims. The Examiner only identified elements comparable to types and predicates, and has failed to address the recitation in Appellants' claims of "*instances ... and literal values* of said related ones of said statements." As the Examiner has implicitly conceded, Wical nowhere teaches or suggests the recited "instances" or "literal values on said related ones of said statements." Indeed, the Examiner failed to address the difference between the "predicates, instances, types of said instances, and literal values of said related ones of said statements." As set forth in Appellants' Specification, a predicate relates to a named property used in a statement, the instance relates to the subject of a statement, types refer to the type of instances, and values refer to objects of a statement.[16] Thus, the Examiner has not identified all of the recitations of claim 1 within Wical, but has instead improperly asserted that the same theme elements disclosed in Wical read on multiple recitations in the claims. For at least this reason, the Examiner's rejection should be reversed.

Furthermore, even if Wical's theme elements read on all the "instances, types of said instances, and literal values of said related ones of said statements," and "statements" recited in the claims, Wical still would not teach or suggest "summarizing said predicates, instances, types, and literal values for presentation to a user as said search results," as recited in claim 1. At most, Wical provides the user with a hierarchical list of the search results that include links to documents and is sorted according to theme elements.[17] Thus, Appellants' claims recite summarizing statements extracted from web resources, whereas Wical discloses at most grouping links to various documents. Wical does not summarize actual statements – or any data –in the given documents.

The rejections of claims 1, 6, 8, and 12 should be reversed at least for the foregoing independent reasons.

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[16] Specification, Page 8, lines 10-13.
[17] Wical, Figures 10-12; Column 25, line 34-Column 26, line 12;

C. Independent Claim 5 and Dependent Claims 3, 10, and 14 (Ground of Rejection No. 1)

Claim 3 depends on claim 1 and recites "gathering statements from said identified Semantic Web structured resources ... [and] ... presenting said gathered statements for parsing." Independent claim 5 recites "gathering statements from said Semantic Web structured resources." Claim 10 depends on claim 8, and recites "means for gathering statements from said identified Semantic Web structured resources to obtain gathered statements ... [and] ... means for presenting said gathered statements for parsing of said gathered statements." Claim 14 depends on claim 12, and recites "gather statements from said identified Semantic Web structured resources to obtain gathered statements...[and]... present said gathered statements for parsing of said gathered statements."

The foregoing claims distinguish between statements and resources by reciting that the parser is presented with the gathered statements, not the resources. The claims do not recite parsing structured resources directly. Wical, in contrast, does not parse and index *the individual statements* in documents 130. Instead, Wical discloses processing each document 130 in its entirety, and assigning each document 130 a single theme vector 160.[18] Therefore, in Wical each document is parsed and processed as a whole, not as a series of statements. Furthermore, Wical does not teach "gathering statements from said identified Semantic Web structured resources," particularly because Wical does not disclose "identifying" Semantic Web structured resources.

On page 7 of the Final Office Action, the Examiner stated that Wical teaches a "search and retrieval system which includes documents such as document 130, the documents may be articles, books, periodicals, etc." As this statement implies, Wical discloses processing entire documents as multiple unique statements. In contrast, as described above, Semantic web resources provide an alternative to simply collecting and indexing entire unstructured resources. Instead of presenting an entire resource for analysis, Semantic Web resources can provide information in a structure that describes and separates the portions of the resource (i.e. the objects) using specific, associated statements.

[18] Wical, Column 5, lines 42-56; Column 6, line 62-Column 7, line 2; Column 7, lines 42-57.

In sum, Wical does not distinguish between themes associated with different portions of documents. Wical clearly does not "gather statements from said identified Semantic Web structured resources to obtain gathered statements...[and]... present said gathered statements for parsing of said gathered statements," because Wical catalogs entire documents using a single theme vector. [19]

Accordingly, the rejections of claims 3, 5, 10, and 14 should be reversed at least for the foregoing independent reasons.

D. Dependent Claims 2, 4, 7, 9, 11, 13, and 15 (Ground of Rejection No. 1)

Claim 2 depends on claim 1 and recites "arranging said predicates, instances, types, and literal values into one or more graphical representations." Claim 4 depends on claim 3 and recites "arranging said predicates, instances, types, and literal values into one or more graphical representations." Claim 7 depends on claim 6 and recites "arranging said predicates, instances, types, and literal values into one or more graphical representations." Claim 9 depends on claim 8 and recites "means for arranging said predicates, instances, types, and literal values into one or more graphical representations." Claim 11 depends on claim 10 and recites "means for arranging said predicates, instances, types, and literal values into one or more graphical representations." Claim 13 depends on claim 12 and recites: "arrange said predicates, instances, types, and literal values into one or more graphical representations." Claim 15 recites: "arrange said predicates, instances, types, and literal values into one or more graphical representations."

Figs. 11A-1, 11A-2, 11B, and 12 of Wical illustrate the search results provided by the disclosed search and retrieval system. In these illustrations, the search results consist of 152 documents in 64 categories. The Examiner cited Wical's col. 4, lines 45-62 as the basis that the search results illustrate "arranging said predicates, instances, types, and literal values into one or more graphical representations."

However, Wical fails to teach or suggest "arranging said predicates, instances, types, and literal values into one or more graphical representations," because the illustrated search

[19] Wical, Column 5, lines 46-491 Column 6, line 64-68.

results fail to illustrate the "predicates, instances, types, and literal values" in a single graphical representation. Instead, Wical only shows a graphical representation grouping 152 documents into 64 themes or categories. Even if Wical's themes and categories read on two of "predicates, instances, types, and literal values," Wical would still fail to teach or suggest at least two of the four claimed features requiring graphical representation.

Wical therefore fails to teach or suggest various features of claims 2, 4, 7, 9, 11, 13, 15, which claims are therefore separately patentable.

VIII. CONCLUSION

In view of the foregoing arguments, Appellants respectfully submit that the pending claims are novel over the cited reference. The Examiner's rejections of all pending claims are improper because the prior art of record does not teach or suggest each and every element of the claimed invention. In view of the above analysis, a reversal of the rejections of record is respectfully requested of this Honorable Board.

It is believed that any fees associated with the filing of this paper are identified in an accompanying transmittal. However, if any additional fees are required, they may be charged to Deposit Account 18-0013, under Order No. 65632-0218, from which the undersigned is authorized to draw. To the extent necessary, a petition for extension of time under 37 C.F.R. 1.136(a) is hereby made, the fee for which should be charged against the aforementioned account.

Respectfully submitted,

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CLAIMS APPENDIX

1. A method of obtaining search results, comprising:

parsing statements from at least one Semantic Web structured resource to identify component words;

constructing an index from said component words, said index relating said component words to said statements;

comparing said component words to a search term to identify matching words;

identifying related ones of said statements for said matching words based on said index;

obtaining predicates, instances, types of said instances, and literal values of said related ones of said statements; and

summarizing said predicates, instances, types, and literal values for presentation to a user as said search results.

2. The method of claim 1, wherein summarizing comprises:

arranging said predicates, instances, types, and literal values into one or more graphical representations; and

grouping said graphical representations according to at least one of said types and said literal values.

3. The method of claim 1, comprising:

identifying Semantic Web structured resources to obtain identified Semantic Web structured resources;

gathering statements from said identified Semantic Web structured resources to obtain gathered statements;

presenting said gathered statements for parsing of said gathered statements;

wherein constructing an index comprises updating said index based on the parsing of said gathered statements; and

wherein said identifying, gathering and presenting are iteratively performed.

4. The method of claim 3, wherein summarizing comprises:

arranging said predicates, instances, types, and literal values into one or more graphical representations; and

grouping said graphical representations according to at least one of said types and said literal values.

5. A computer-readable medium containing instructions for controlling a processor to construct a database by:

visiting sites on a network to identify Semantic Web structured resources;

gathering statements from said Semantic Web structured resources;

parsing of said statements to identify component words;

constructing an index from said component words, said index relating said component words to said statements;

storing said index as said database on said computer-readable medium; and

updating said database by iteratively performing said visiting, said gathering, said parsing, said constructing, and said storing.

6. The computer-readable medium of claim 5, further comprising instructions for controlling the processor to obtain search results for a search query using said database by:

obtaining predicates, instances, types of said instances, and literal values of said statements related to search terms of said query by said index; and

summarizing said predicates, instances, types, and literal values for presentation to a user as said search results.

7. The computer readable medium of claim 6, further comprising instruction for controlling the processor to display said search results by:

arranging said predicates, instances, types, and literal values into one or more graphical representations; and

grouping said graphical representations according to at least one of said types and said literal values.

8. A system for obtaining search results for a query prepared by a user, comprising:

at least one parser receiving statements from Semantic Web structured resources and identifying component words of said statements;

a processor for constructing an index relating said component words to said statements;

a database for storing said index;

a search engine for matching search terms of said query to said component words to obtain matched words, said search engine identifying said statements related to said matched words;

a servlet for obtaining predicates, instances, types of said instances, and literal values of said statements related to said matched words; and

an object viewer for summarizing said predicates, instances, types, and literal values for presentation to said user as said search results.

9. The system of claim 8, wherein said object viewer comprises:

means for arranging said predicates, instances, types, and literal values into one or more graphical representations; and

means for grouping said graphical representation according to at least one of said types and said literal.

10. The system of claim 8, comprising:

means for identifying Semantic Web structured resources to obtain identified Semantic Web structured resources;

means for gathering statements from said identified Semantic Web structured resources to obtain gathered statements;

means for presenting said gathered statements for parsing of said gathered statements;

means for iteratively invoking said means for identifying, said means for gathering and said means for presenting, and

wherein said processor comprises means for updating said index based on the parsing of said gathered statements.

11. The system of claim 10, wherein said object viewer comprises:

means for arranging said predicates, instances, types, and literal values into one or more graphical representations; and

means for grouping said graphical representations according to at least one of said types and said literal values.

12. A computer program, disposed on a computer readable medium, for enabling searching of and presentation of search results from Semantic Web structured resources, said computer program including instructions for causing a processor to:

parse statements from at least one Semantic Web structured resource to identify component words;

construct an index from said component words, said index relating said component words to said statements;

compare said component words to a search term to identify matching words;

identify related ones of said statements for said matching words based on said index;

obtain predicates, instances, types of said instances, and literal values of said related ones of said statements; and

summarize said predicates, instances, types, and literal values for presentation to a user as said search results.

13. The computer program of claim 12, wherein said instructions for causing a processor to summarize further comprise instructions for causing a processor to:

arrange said predicates, instances, types, and literal values into one or more graphical representations; and

group said graphical representations according to at least one of said types and said literal values.

14. The computer program of claim 12, wherein said instructions further comprise instructions for causing a processor to:

identify Semantic Web structured resources to obtain identified Semantic Web structured resources;

gather statements from said identified Semantic Web structured resources to obtain gathered statements;

present said gathered statements for parsing of said gathered statements;

wherein said instructions for causing a processor to construct an index comprise instructions for causing a processor to update said index based on the parsing of said gathered statements; and

wherein said instructions for causing a processor to identify, gather and present comprise instructions for causing a processor to iteratively identify, gather and present.

15. The computer program of claim 14, wherein said instructions for causing a processor to summarize further comprise instructions for causing a processor to:

arrange said predicates, instances, types, and literal values into one or more graphical representations; and

group said graphical representations according to at least one of said types and said literal values.

EVIDENCE APPENDIX

(Not applicable).

RELATED PROCEEDINGS APPENDIX

(Not applicable).